

POSITION DUTY STATEMENT

PM-0924 (REV 11/2017)

CLASSIFICATION TITLE Structural Design Tech I	OFFICE/BRANCH/SECTION Structure Maintenance & Investigations/Maintenance Design	
WORKING TITLE Detailer	POSITION NUMBER 913-626-3038-XXX	EFFECTIVE DATE

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

GENERAL STATEMENT:

This is the entry and first journey level of the series. Under the general direction of a Senior Bridge Engineer and/or lead person, the incumbent prepares simple drawings and assists in the preparation of complete design, construction, and as-built drawings for a variety of structures.

CORE COMPETENCIES:

As a Structural Design Tech I, the incumbent is expected to develop the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, and Goals.

- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Stewardship and Efficiency - Integrity, Commitment, Teamwork, Innovation)
- **Commitment/Results Oriented:** Dedicated to public service and strives for excellence and customer satisfaction. Ensures results in their organization. (Stewardship and Efficiency - Integrity, Commitment, Teamwork, Innovation)
- **Communication:** Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Stewardship and Efficiency/Organizational Excellence - Integrity, Commitment, Teamwork, Innovation)
- **Computer literacy and application:** Appropriate knowledge of computer applications and other tools necessary to successfully perform tasks. (Stewardship and Efficiency - Integrity, Commitment, Teamwork, Innovation)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Stewardship and Efficiency/Organizational Excellence - Integrity, Commitment, Teamwork, Innovation)
- **Ethics and Integrity:** Demonstrated concern to be perceived as responsible, reliable, and trustworthy. Respects the confidentiality of information or concern shared by others. Honest and forthright. Conforms to accepted standards of conduct. (Stewardship and Efficiency/Organizational Excellence - Integrity, Commitment, Teamwork, Innovation)
- **Forward Thinking:** Anticipates the implications and consequences of situations and takes appropriate actions to be prepared for possible contingencies. Anticipates and prepares for future developments. (Stewardship and Efficiency/Organizational Excellence - Integrity, Commitment, Teamwork, Innovation)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	
50% E	Assists engineers in the preparation of a complete set of construction contract drawings for a variety (e.g.: concrete, steel, masonry and timber) of average difficulty structures (e.g.: retaining walls, sound walls and bridges) from engineer's design notes and sketches, by using state-of-the-art technology, i.e.: Microstation Computer-Aided-Drafting/Design (CADD) and related programs to assist in the development of details, layout and geometric design and to assist in electronically submitting plans to Office Engineer. Assists engineers in the geometric design of average difficulty and prepares simple drawings (e.g.: retaining walls, sound walls and bridge plan views and typical sections) based on data supplied by District and/or engineer's design notes and sketches. Communicate both orally and in writing; follow oral and written directions; interpret sketches, drawings, and plans encountered in the work.
15% E	Makes engineering calculations as required for horizontal and vertical alignment and dimensions for layout of average difficulty structures based on data supplied by the District and/or engineer's design notes and sketches.
10% E	Calculates and checks quantities for preliminary estimates of structure costs based on the General Plan and final estimates of structure costs based on set construction contract drawings.
5% E	Makes preliminary layouts of various types of structures for planning studies using the state-of-the-art technology, i.e., CADD and related computer programs.

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5%	E	Review the contract drawings to ensure conformance to the Caltrans Structure Drafting and Plan Preparation Standards.
5%	E	Maintain project data and records to monitor progress of Maintenance Design projects and to create a historical record of them.
5%	M	Completes as-builts corrections either by hand-drafting or uses state-of-the-art technology (i.e.: CADD) based on data supplied by the Structure Construction representative and/or the Project Engineer.
5%	M	Accompany designer(s) on field investigations related to Maintenance Design projects.

1ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.

MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

This position does not supervise other employees.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of:

- Common details, methods of layouts used in preparation of structural design, construction drawings and as-builts for a variety of structures of average difficulty.
- Basic engineering mathematics; simple quantity estimates.
- State-of-the-art technology, i.e., CADD and related computer programs used to determine layout, detail drawings and create geometric design for various of structures.

Ability to:

- Communicate both orally and in writing.
- Follow oral and written directions.
- Draft neat, accurate and legible plans of average difficulty.
- Interpret sketches, drawings and plans encountered in the work.
- Prepare and check quantity estimates.
- Use state-of-the-art technology, i.e., CADD and related computer programs.
- Make basic engineering calculations; plot data from field notes.
- Prepare charts and graphs.
- Use mathematical calculations and interpretation of the survey notes and computer alignment output preparing General Plans, site data and locating specific abutments and bents.

Analytical Requirements:

- Use of trigonometric calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents.
- Must be thoroughly informed in regard to information available from standards.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent exercises judgment in the selection of views and standard plans and details used in the preparation of a complete set of plans, which could result in incomplete information in the contract plans and estimates. Incomplete information in the contract plans and estimates could result in unnecessary rework, increased cost and time to produce corrected plans, and possible delay of the project.

PUBLIC AND INTERNAL CONTACTS

Employee maintains communications, generally through the Project Engineer, with various personnel working on the project to which he/she is assigned, including other Department personnel, engineering consultant and industry representatives to transmit or obtain relevant engineering information. These contacts will be verbal or written, as needed to perform one's assignments.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Employee may be required to sit for long periods of time using keyboard and mouse. May also be required to lift/move/carry large or cumbersome plans (maximum of 50 pounds). They may be required to lift/move/carry various types of portable equipment, which may weigh up to 50 pounds, around the work site or when out in the field.

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WORK ENVIRONMENT

Employee will work in a climate-controlled office under artificial lighting. Employees may also be required to travel to job sites and may be exposed to dirt, noise, uneven surfaces and/or extreme heat or cold.

I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

EMPLOYEE (Print)

EMPLOYEE (Signature)

DATE

I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

SUPERVISOR (Signature)

DATE

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